margins in 1987, a decrease in fishing habitat may have led to a decrease in the numbers of these species. *A. purpurea* has a different habitat to these species, being found only in the papyrus beds on the eastern side of the lake during 1987. An increase in the amount of papyrus would enable this species to increase in numbers on the lake. *Anhinga rufa* was not seen at all during the two 1989 surveys and was only present in low numbers in 1987. This species may well have been lost from the Naivasha avifauna but since numbers were very low in 1987 it is unlikely that changes in the lake level or fishery have affected its density. It is possible that continuous poaching in the areas away from habitation where *A. rufa* occurs has led to birds being snared in nets and drowned.

Acknowledgements

This work was carried out under Research permit No. OP13/001/12c 46, issued by the Office of the President of the Republic of Kenya to Dr D. M. Harper. The authors would like to thank Earthwatch, and all the volunteers who contributed to the survey work.

Reference

Åse, L-E. 1987. A note on the water budget of Lake Naivasha, Kenya *Geografiska Annaler* 69 Ser. A 415–429.

C. D. Taylor, Kingston Grammar School, Kingston, Surrey, England, A. C. Smart, The Durrell Institute of Conservation and Ecology, University of Kent, Canterbury, Kent CT2 7NX, England and *S. M. Muchiri, Department of Zoology, University of Leicester, Leicester LE1 7RH, England*

Scopus 15: 120–122, April 1992 Received 15 March 1991

Four Afrotropical migrants on the East African coast: evidence for a common origin

During the ongoing ringing study in the Pugu Hills (6°53S, 39°05S) south-west of Dar es Salaam, 18 species of Afrotropical migrant have been handled or observed utilizing the forest. During 1988, these included four species which were infested with orange-coloured mites around the cloaca and feathers of the tibiae.

The ringing site has been in regular use since May 1981 and the total number of captures exceeds 2600 birds. Mites had not been noticed previously but recent evidence suggests that they may have been overlooked before May 1988.

The following individual birds carried mites in May 1988:

7th	Spotted Ground Thrush *Turdus fischeri*
8th	Eastern Bearded Scrub Robin *Cercotrichas quadrivirgata*
14th	*T. fischeri*
15th	*T. fischeri*
15th	African Pitta *Pitta angolensis*
22nd	Orange Ground Thrush *Turdus gurneyi*

The above birds represent the totals netted for each of the four species during the 1988 post-breeding movement.

Pitta angolensis

A regular passage migrant during April and May in small numbers. Extreme dates for netted birds are 6 April to 15 May ($n = 7$). This species is often seen in the forest during this period and calling has been recorded. None of the birds handled was in active moult and, in some cases, the plumage was obviously worn. This would indicate that moult takes place in the non-breeding quarters after migration.

Cercotrichas quadrivirgata

A breeding resident in low densities and a suspected passage migrant. The above record is the first suggestive evidence of immigration or passage. Only nine of the species have been ringed since May 1981 and of these one individual has been handled 12 times between 21 November 1982 and 6 November 1988. The May 1988 bird was re-caught on 27 November 1988, presumably on its way back from non-breeding quarters. It was examined closely for mites but none was found.

Turdus fischeri

A regular passage migrant during May; extreme dates for netted birds are between 1st and 22nd ($n = 8$). Some adults were still moulting the inner secondaries which would seem to indicate that moult takes place on the breeding grounds before migration. Two of the adults handled in May 1989 were carefully examined for mites: a few were found, but only among the feathers of the tibiae. In our view these mites would not have been noticed during normal handling for ringing.

Turdus gurneyi

This species was totally unexpected on the coast. We are not aware of any records from Tanzania outside the species' normal habitat in montane forests, although it is known from lower elevations in Kenya (D.J. Pearson, pers. comm.). The bird was still moulting its inner secondaries.

All four species inhabit the forest floor and it seems likely that these individuals breed in the same area. We have no information on how quickly an infestation of mites can occur but we would expect this to involve more than a casual contact, such as sharing a habitat for a day or two on migration. In southern Tanzania, *P. angolensis*, *C. quadrivirgata* and *T. fischeri* are known to breed alongside each other on the Rondo Plateau (10°09S, 39°15E) (A. Bräunlich, pers. comm.). However, the only known locality where *T. fischeri* and *T. gurneyi* occur together is in southern Malawi (Benson & Benson 1977, Dowsett 1981). The race of *T. fischeri* in southern Malawi is b*elcheri* whereas ours are presumably nominate. We suggest that an unknown population of both species exists, possibly in northern Moçambique.

It is interesting to note that none of the migrant Red-capped Robin Chats *Cossypha natalensis* ($n = 55$) moving through Pugu Forest Reserve during April and May 1988 carried these orange mites. We have suspected for some time that these birds do not originate from the southern part of the country. However, this is the first direct evidence

to suggest that the robin chats are not part of the general post-breeding south-to-north movement along the coast.

References

DOWSETT, R.J. 1981. The past and present distribution of montane birds in Malawi. *Nyala* 7: 25–45.

BENSON, C.W. & BENSON, F.M. 1977. *The birds of Malawi*. Limbe: Montfort Press.

N.E. and E.M. Baker, Box 23404, Dar es Salaam, Tanzania

Scopus 15: 122–124, April 1992 Received 31 July 1989

Some observations on Dunlin *Calidris alpina* wintering in the Sudan

Dunlins *Calidris alpina* winter regularly in the Sudan and Ethiopia south to about 13°N (Nikolaus 1987, Ash & Miskell 1981). The wintering population in Sudan has been estimated as 5000–10 000 birds along the Red Sea coast and 3000–6000 birds inland, mainly along the Nile. During 1980–1982, I mist netted 139 Dunlin at the coast near Suakin (19°05N, 37°20E), where the species occurs together with Little Stint *C. minuta*, Curlew Sandpiper *C. ferruginea* and Greater Sandplovers *Charadrius leschenaultii* in small muddy bays in mixed flocks of up to 500 waders. Forty-nine Dunlin were also mist-netted at Khartoum during 1980–1983 along the banks of the White Nile (15°35N, 32°30E). The species was present there with larger numbers of Ruff *Philomachus pugnax*, Little Stints, Curlew Sandpipers and Kentish Plovers *Charadrius alexandrinus* in flocks totalling 5000 or more at good sites, especially when water levels were decreasing in autumn and winter.

Measurements

Twenty-four bills were measured on the Red Sea coast during October (Fig.1). Mean bill length was 32.9 mm (range 28–38) but the distribution was bimodal. Assuming that measurements above 35 mm represented females, and those below 35 mm males, it would appear that the sex ratio (male : female) was about 2.5 : 1. Mullie & Meininger (1981) found a similar range of bill lengths and inferred a similar sex ratio in Egypt. The range of bill lengths in Sudan also fits well with what I found for *C. a. alpina* wintering on the German Wadensee (see also Pienkowski & Dick 1975).

Wing-lengths (maximum flattened chord) taken at the two Sudan sites are given in Table 1. They indicate that the inland birds along the Nile are slightly larger, with a mean of 118.8 mm (n = 49) than those on the coast (mean 117.6, n = 139). Unfortunately, bill length was not measured at the Nile site, for a higher percentage of females could be the explanation for the wing-length difference.